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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,640	06/28/2001	Timothy Mellow	107640314 X00	4499
20457	7590	10/22/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			LE, HUYEN D	
			ART UNIT	PAPER NUMBER
			2643	

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/892,640	MELLOW, TIMOTHY
	Examiner	Art Unit
	HUYEN D. LE	2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 June 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-6 and 9-28 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-6 and 9-16 is/are rejected.  
 7) Claim(s) 17-28 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

1. Claims 12-13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The limitations in claims 12-13 have been claimed in claim 11.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6, 9, and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chick (U.S. patent 6,363,157).

Regarding claims 1 and 11-13, Chick teaches a speaker that comprises first and second opposed diaphragms (1, 2, 4, 5, 6, 8, 14, 16). As shown in figure 1, the diaphragms enclose a cavity (25), move in the same direction, and they are arranged to be driven as claimed (col. 1, lines 21-26 and col. 2, lines 44-49).

Regarding claim 6, the first and second diaphragms are mounted on either side of an insulating support (12).

Regarding claims 9 and 14, as broadly claimed, Chick shows the cavity (25) that is filled with a gas as claimed (col. 3, lines 41-49).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chick (U.S. patent 6,360,157).

Regarding claims 2-3, Chick does not teach the first and second diaphragms that have a piezoelectric effect or a piezoelectric film having a conductive coating as claimed in claims 2-3. However, it is known in the art to provide a piezoelectric type for the loudspeaker.

Therefore, it would have been obvious to one skilled in the art to provide any type for the Chick speakers (14, 16) such as a piezoelectric speaker type that has a piezoelectric film having the electrodes coating for greater application.

Regarding claims 4-5, Chick further does not specifically teach the piezoelectric film comprises PVDF and the coating as claimed.

However, the examiner takes the Office Notice that providing the piezoelectric film in a loudspeaker comprising the PVDF material and the ITO coating is very well-known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any type of the material for the piezoelectric loudspeaker such as a PVDF material and the ITO coating for the piezoelectric speaker of Chick for an alternate choice.

Regarding claim 16, Chick does not teach the speaker system to be used in an electronic device. However, it is known in the art to apply a speaker system in any electronic device.

Therefore, it would have been obvious to one skilled in the art to provide the speaker system of Chick in any electronic device for greater application.

6. Claims 9-10 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chick (U.S. patent 6,360,157) in view of Petiet (U.S. 6,023,123).

Regarding claims 9 and 14, as interpreted in a different manner, Chick does not specifically disclose that the cavity (25) is filled with a gas as claimed in claims 9 and 14. However, providing a gas in a space between two diaphragms for controlling the pressure in the cavity is known in the art.

Petiet teaches that a cavity or a space between two diaphragms is filled with a gas (figure 2D).

Therefore, it would have been obvious to one skilled in the art to provide the cavity (25) to be filled with a gas, as taught by Petiet, for better controlling the pressure in the cavity (25).

Regarding claims 10 and 15, Petiet does not specifically teach the gas as claimed. However, Petiet does not restrict to any type of gas in the cavity (col. 3, lines 43-46).

Therefore, it would have been obvious to one skilled in the art to provide any type of gas such as sulphur tetrafluoride for better controlling the pressure in the cavity (25) and the vibrations of the diaphragms (1,5) in the speaker system of Chick in view of Petiet.

***Allowable Subject Matter***

7. Claims 17-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-6 and 9-16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (703) 305-4844. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL

October 14, 2004



HUYNH LE  
PRIMARY EXAMINER